Atty. Docket No. YOR920000737US1
(590.033)

REMARKS

Please note the fact that June 26, 2005, fell on a Sunday ensures that this paper is timely filed as of today, Monday, June 27, 2005 (the next succeeding day which is not a Saturday or Sunday).

In the Office Action dated January 26, 2005, pending Claims 1-25 were rejected and the rejection made final. In response Applicants have filed herewith a Request for Continued Examination and have amended dependent Claim 17. Applicants intend no change in the scope of the claims by the changes made by this amendment. It should be noted this amendment is not in acquiescence of the Office's position on allowability of the claims, but merely to expedite prosecution.

The Office is respectfully requested to reconsider the rejections presented in the outstanding Office Action in light of the following remarks.

Claims 1-25 were pending in the instant application at the time of the outstanding Office Action. Of these claims, Claims 1, 13 and 25 are independent claims; the remaining claims are dependent claims. Claims 1 and 13 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Miller et al. (hereinafter "Miller"). Claims 2-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller and in view of Kita et al. (hereinafter Kita). Claim 25 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller in view of Coughlin. Reconsideration and withdrawal of the present rejections is hereby respectfully requested.

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The comments made regarding the present invention in the previous Amendment are equally appropriate here. When test data for a parser is different in nature than the data on which the parser was trained, the performance of a parser will become worse than that of a matched condition. The present invention thus broadly contemplates adapting statistical parsers to new data. In particular, it is assumed that an initial statistical parser is available and a batch of new data is given. In unsupervised adaptation, however, true parses of the new data are not available. The initial model preferably includes a finite collection of probability mass functions (pmf's). The pmf's are preferably transformed into a new model via Markov matrices. These Markov matrices are preferably obtained by maximizing the likelihood of test data with respect to the decoded parses using the initial model. The adaptation scheme may also be carried out iteratively. (See Page 3, line 15 - Page 4, line 7) The instantly claimed invention thus requires specifically "**adapting the statistical [parsing] model** via employing a mathematical transform". (Claim 1, emphasis added) Similar language appears in the other independent claims.

As best understood, Miller appears to be directed to a natural language processing system consisting of three stages of processing: parsing, semantic interpretation, and discourse. (Abstract) Once the parsing model of Miller has been created, the parsing model is searched using a decoder that is based on a previously adapted version of the Earley algorithm. (Page 58). In the most recent office action dated January 2005, the Examiner asserted that "[I]t is inherent that if the Earley parsing algorithm is adapted, the parsing model containing that algorithm will also be adapted". (Page 2, Section 2) If the algorithm were adapted in conjunction with or in use with the parsing model, this

statement might be true. However, it is respectfully submitted that there is no teaching or suggestion in Miller that the algorithm was adapted in conjunction or in use with the parsing model. Rather, the algorithm was adapted separately as part of a Ph.D. thesis submitted by Miller at Northeastern University, and this already adapted, static version of the algorithm is used as a basis for the decoder that Miller uses in the prior art cited. It is thus respectfully submitted that Miller falls short of the present invention.

Applicants respectfully submit that the applied art does not anticipate the present invention because, at the very least, "[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under construction." W.L. Gore & Associates, Inc. v. Garlock, 721 F.2d 1540, 1554 (Fed. Cir. 1983); see also In re Marshall, 198 U.S.P.Q. 344, 346 (C.C.P.A. 1978).

The Office also rejected certain claims under 35 U.S.C. § 103(a) over Miller in combination with various references, asserting "it would have been obvious ... to combine the parsing system of Miller et al. with the Markov calculations as taught by Kita et al." and "it would have been obvious ... [to] implement the parser unit of Miller et al. with the computer program of Coughlin". Applicants respectfully traverse these rejections.

Kita in combination with Miller also does not overcome the deficiencies of Miller as discussed above. Neither Miller nor Kita suggest "adapting the statistic parsing model via employing a mathematical transform". (Claim 1, and other independent claims) A 35 U.S.C. § 103(a) rejection requires that the combined cited references provide both the

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motivation to combine the references and an expectation of success. There is, however, absolutely no teaching or suggestion in Kita that would lead one of ordinary skill in the art to modify Miller to arrive at the present invention. Moreover, actually combining the teachings of Miller and Kita would not result in the present invention as the present invention specifically requires **"adapting the statistical [parsing] model via employing a mathematical transform"**. (Claim 1, emphasis added) Further, the rejection over the combination of Miller and Kita appears to be based on a misunderstanding of a Hidden Markov Model and a Markov Transform. Despite sharing a common word ("Markov"), the Hidden Markov Model of Kita is not the Markov Transform of the present case. The Hidden Markov Model of Kita refers to a random process used to model human speech. In the present case, a Markov Transform has nothing to do with a random process. Rather, it is a particular mathematical form that is particularly suitable for modifying an existing statistical parser so that the modified model better fits new data. In fact, the use of a Markov Transform is one embodiment of the present invention. (See Page 3, lines 15-17; "[i]n accordance with at least one presently preferred embodiment of the present invention, an arrangement is contemplated for adapting statistical parsers to new data using Markov transform.") It is respectfully submitted this rejection should be withdrawn.

Coughlin in combination with Miller also does not overcome the deficiencies of Miller as discussed above with respect to the independent claims. Neither Miller nor Coughlin suggest "an adapter that adapts the statistic parsing model via employing a mathematical transform". (Claim 25, and other independent claims) A 35 U.S.C. §

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103(a) rejection requires that the combined cited references provide both the motivation

to combine the references and an expectation of success. There is, however, absolutely

no teaching or suggestion in Coughlin that would lead one of ordinary skill in the art to

modify Miller to arrive at the present invention. Moreover, actually combining the

teachings of Miller and Coughlin would not result in the present invention as the present

invention specifically requires **"adapting the statistical [parsing] model via employing

a mathematical transform"**. (Claim 1, emphasis added).

By virtue of dependence from what are believed to be allowable independent

Claim 1 and 13, it is respectfully submitted that Claims 2-12 and 14-24 are also presently

allowable.

The "prior art made of record" has been reviewed. Applicants acknowledge that

such prior art was not deemed by the Office to be sufficiently relevant as to have been

applied against the claims of the instant application. To the extent that the Office may

apply such prior art against the claims in the future, Applicants will be fully prepared to
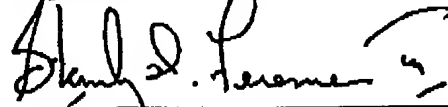
respond thereto.

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In summary, it is respectfully submitted that the instant application, including

Claims 1-25, is presently in condition for allowance. Notice to the effect is earnestly

solicited. If there are any further issues in this application, the Examiner is invited to

contact the undersigned at the telephone number listed below.

Respectfully submitted,

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